

Appl. No. 10/011,771  
Amdt. Dated Aug. 2003  
Reply to Office Action of May 9, 2003

### REMARKS

#### ***Claim Rejections under 35 U.S.C. 102(b)***

Claims 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 06-294911 (Nishina).

In response to this rejection, Applicant has amended independent claim 9, adding more limitations therein which define over the prior art cited by the Examiner in this Office Action. Accordingly, claim 9 should be allowable.

Regarding claim 9, an optical attenuator comprises opposite input and output optical fibers respectively enclosed in first and second ferrules with confrontation ends of the first and second ferrules spaced from each other; a **neutral density filter** positioned between the confrontation ends; and a retainer holding the first ferrule and the second ferrule to have the first fiber, the second fiber and the attenuating device moved together axially; wherein the **neutral density filter** comprises a **first surface and a second surface**, and at least one of the first surface and the second surface is not perpendicular to a direction of an incident light beam. However, Nishina discloses a ferrule 5 coated with an optical attenuation film 19, rather than a neutral density filter. In addition, Nishina does not disclose that one of the surfaces of the optical attenuation film is not perpendicular to a direction of an incident light beam (described in Nishina). The optical attenuator of the instant invention defined by claim 9 has a structure significantly **different** from that of the optical attenuator in Nishina.

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Claim 9 is novel and different from Nishina. Therefore, it should be in a condition for allowance.

Claims 10 and 12-15 depend directly or indirectly from claim 9 and incorporate more than their own patentable features therein, so they are also novel and different from the cited reference.

***Claim Rejections under 35 U.S.C. 103(a)***

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 62-121405 (Umeki et al.) in view of JP 06-294911 (Nishina).

In response to this rejection, Applicant has amended independent claim 1, adding more limitations therein which define over the prior art cited by the Examiner in this Office Action. Accordingly, claim 1 should be allowable.

Regarding claim 1, an optical attenuator comprises an input optical fiber, an output optical fiber, a first ferrule receiving the input optical fiber therein; a second ferrule receiving the output optical fiber therein; a neutral density filter comprising a first surface and a second surface, wherein at least one of the first surface and the second surface is not parallel to end surfaces of the input optical fiber and the output optical fiber; a plurality of retaining devices retaining the filter, the first ferrule and the second ferrule; and a cover retaining the retaining devices and protecting the optical attenuator.

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Claim 1 defines an optical attenuator having a neutral density filter. The neutral density filter is attached *only to a terminal* of the first ferrule, *and spaced from a terminal of the second ferrule* which confronts the terminal of the first ferrule. However, in Umeki, both faces of the ND filter 4 are bonded to corresponding end faces 2a, 3a of the optical ferrules 2, 3 using an adhesive material. There is no space between the ND filter and the end surfaces of the optical ferrules. This feature makes Umeki very different from the instant invention. Umeki has to utilize a neutral density filter having two slanting faces in order to be attached to end surfaces of the ferrules, since the ferrules have slanted end faces. Both faces of the ND filter in Umeki are *parallel* to end surfaces of the ferrules and the fibers. However, the ND filter used in the instant invention has at least one face *not parallel* to an end surface of an optical fiber. This important feature is *not* disclosed in either Umeki or Nishina. Therefore, the instant invention is not obvious from a combination of Umeki and Nishina since neither discloses this important feature of the present invention and the combination of the cited references does not suggest the instant invention.

A conventional optical attenuator has a neutral density (ND) filter. The ND filter comprises an anti-reflection film stack or a haze film stack, either of which reduces optical feedback. However, such film stacks can only decrease optical feedback rather than completely eliminate it. However, the Applicant succeeds in solving this problem to obtain a desired attenuation value by utilizing an ND filter having at least a face not parallel to an end surface of an optical fiber. This is an important and significant in the optical communications art.

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The optical attenuator defining claim 1 is novel over the cited references, and produces *unexpected and surprising* advantages; therefore, claim 1 should be in a condition for allowance.

Claims 2-4 depend directly or indirectly from claim 1 and incorporate more features therein, so they are also novel and non-obvious over the cited references and should be in a condition for allowance.

Claim 5 has been amended to overcome minute logical errors, and should be allowable, since the Examiner said it is allowed.

Claims 6-8 depend directly or indirectly from claim 5, so they also should be allowable as the Examiner stated in the Office Action.

In view of the above claim amendments and remarks, the subject application is believed to be in a condition for allowance and an action to such effect is earnestly solicited.

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